

**DRIESCHER -
Customer specific Switches**

**Indoor - Outdoor -
Disconnectors and
Earthing Switches**



ES

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DRIESCHER - Special Design

Content

- 2 General, operating conditions, technical description
- 3 2-pole indoor earthing switch ES 24-20-2 ; (U_r 24 kV)
- 4 4-pole indoor earthing switch ES 12-20-4 u. ES 24-20-4 ; (U_r 12 kV and 24 kV)
- 5 3-pole indoor earthing switch ES 24-.. ; (U_r 24 kV)
- 6 7-, 8- and 9-pole indoor earthing switch ES 12-20-.. ; (U_r 3,6 kV)
- 7 7-pole indoor earthing device EE 3,6-5-7 ; (U_r 3,6 kV)
- 8 1-pole indoor disconnecter ITr 12-4000-50-1 ; (U_r 12/ $\sqrt{3}$ kV)
- 9 2-pole indoor disconnecter ITr ..-...-...-2 ; (U_r 12 kV, 24 kV and 38,5 kV)
- 10 2-pole indoor disconnecter ITr ..-...-...-2 ; (U_r 12 kV, 24 kV and 38,5 kV)
- 11 4-pole indoor disconnecter ITr 12-4000-50-4 ; (U_r 12 kV)
- 12 2-pole outdoor disconnecter FTr 12-630-20-2 ; (U_r 12 kV)

General

The **disconnectors ITr** and **FTr** are applicable for a rated voltage of 12 kV, 24 kV, 36 kV and 38.5 kV and a rated current range from 630 A up to 4000 A. Higher rated currents on request.

The rated short-time current up to 50 kA for a duration of 3 s respectively 1 s depending on the model has been tested. The described disconnectors are intended for currentless switching in medium-voltage switchgears.

The **earthing switches ES** can be used for a rated voltage of 3.6 kV, 12 kV, 24 kV, 36 kV and 38.5 kV. Some earthing switches have a short-circuit making capacity and are specified with the electrical life E1. The electrical life E0 is specified for earthing switches without short-circuit making capacity.

All switchgears are type-tested according to EN 62271-102. For each switch an instruction manual for transportation, mounting and putting into operation is enclosed.

Operating Conditions

The installation of the switches can be carried out at heights of up to 1000 m above sea level. At heights above 1000 m the rated insulating level of the switch has to be corrected accordingly.

The switches are designed for normal operating conditions according to EN 62271-1.

According to this the following limiting values apply:
Ambient temperature:

Peak value of the ambient temperature: +40°C

Highest average value over 24 hours: +35°C

Lowest ambient temperature: -25°C / - 5°C
(class "minus 5 indoor")

(class "minus 25 outdoor")

Technical Description

General

The base frames of indoor switches are zinc-plated and chromated, of outdoor switches hot-dip galvanized. The current carrying paths are galvanic silver-plated. The contacts and the contact blades are made of drawn electrolytic copper.

Rustproof pressure springs maintain the required contact force over the whole mechanical life.

Equipments

Generally, all DRIESCHER disconnectors and earthing switches are equipped with an operating shaft ($\varnothing$ 30 mm) what enables the optional mounting of the actuator on the left for or on the right side.

The disconnectors with a rated current of 2500 A and higher, have contact elements with self lubricating coat silver-graphite on the impact side.

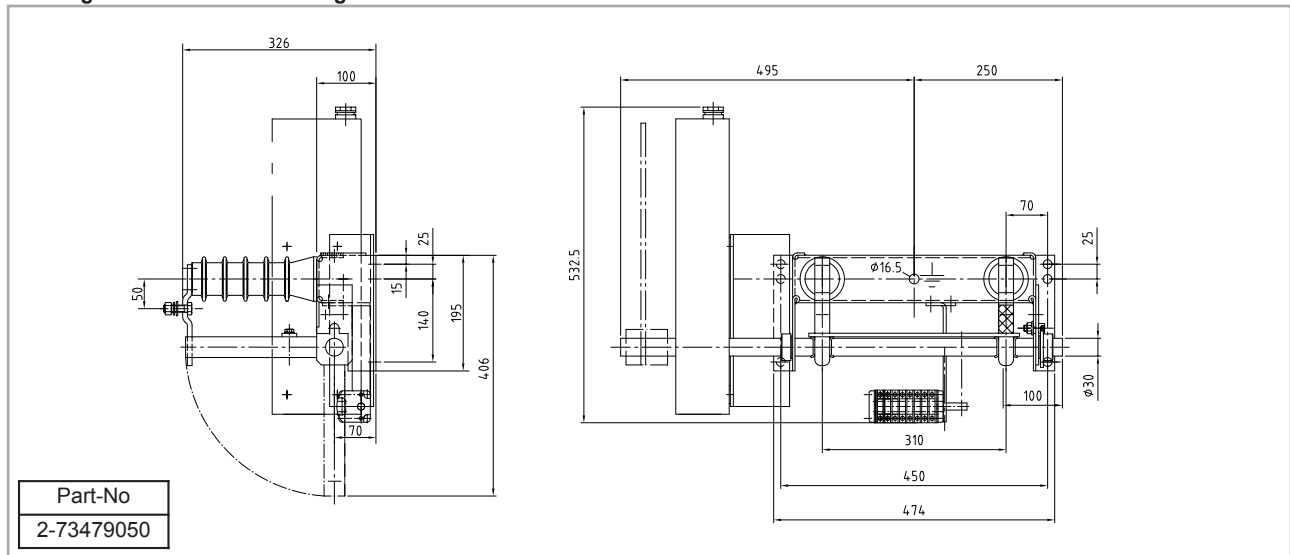
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2-pole Indoor Earthing Switch Type ES 24-20-2 ; (Ur 24 kV)

Type	ES 24-20-2	
Rated voltage	U_r	24 kV
Rated frequency	f_r	50 Hz / 60 Hz
Rated short-time current	I_k	20 kA
Rated short-circuit duration	t_k	3 s
Rated peak withstand current	I_p	50 kA
Rated impulse withstand voltage	U_p	
- Phase to earth		125 kV
Rated power frequency withstand voltage	U_d	
- Phase to earth		50 kV
Drawing-no.	IT3-108087	
Mechanical life	M2	
Electrical life	E0	

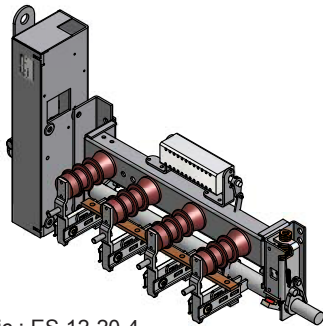
Accessory: • signalling contacts
• motor actuator UM 10 and 50

Drawing for ES 24-20-2 / Drawing-no IT3-108087



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4-pole Indoor Earthing Switch Type ES 12-20-4 and ES 24-20-4 ; (Ur 12 kV and 24 kV)

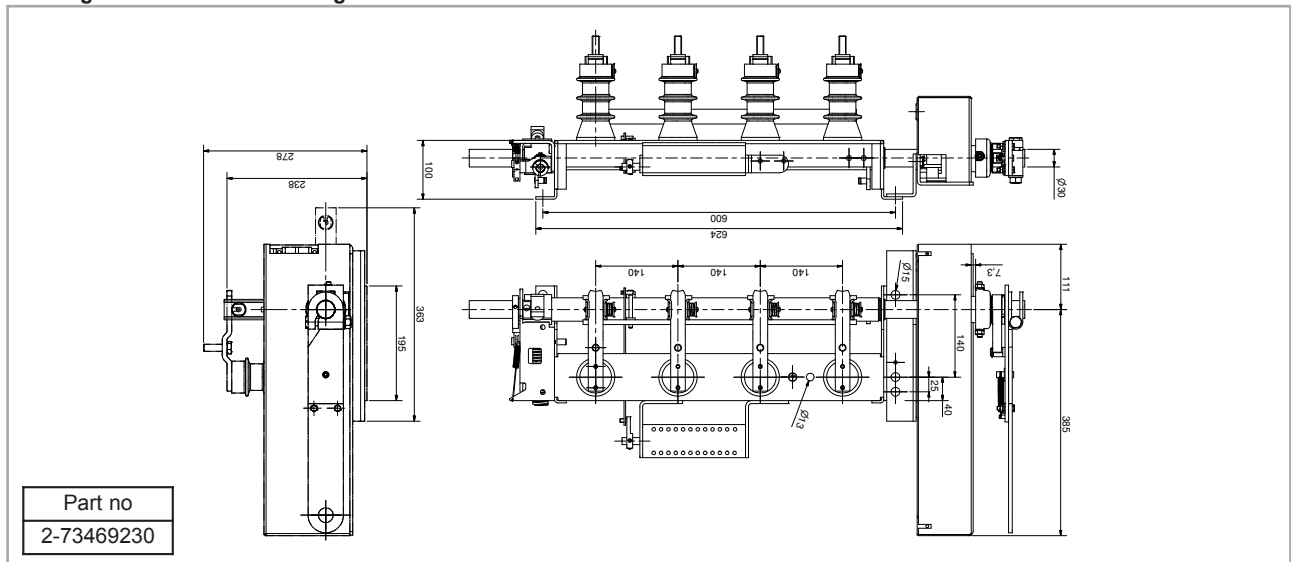


Pic.: ES 12-20-4

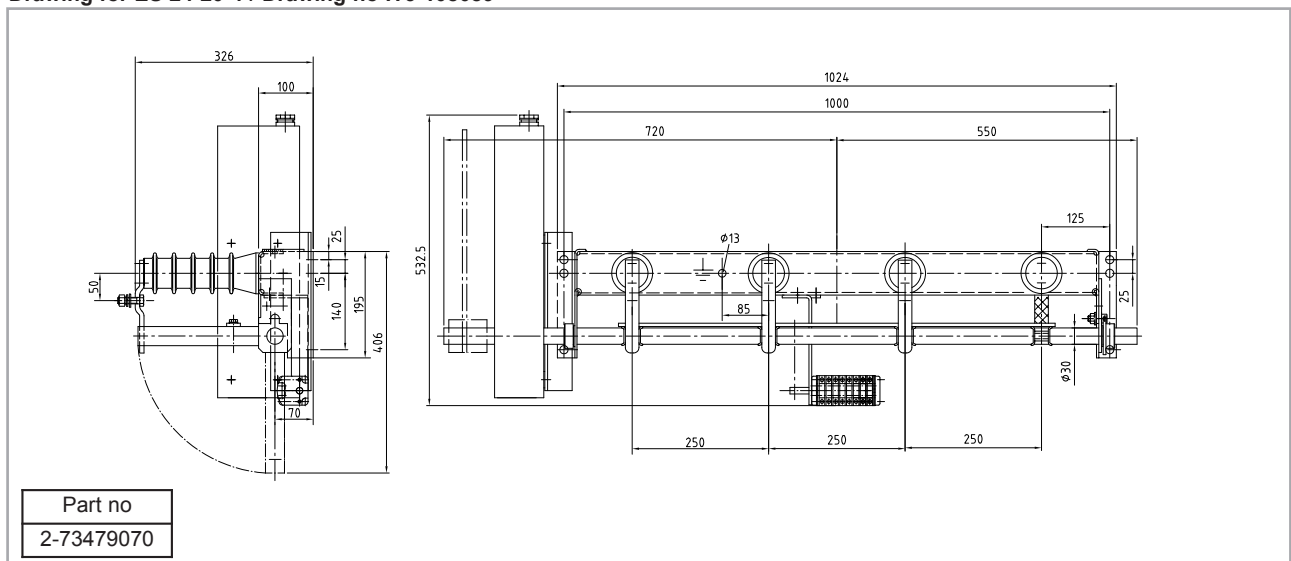
Accessory: • signalling contacts
• motor actuator UM 10
and UM 50

Type	ES 12-20-4		ES 24-20-4
Rated voltage	U_r	12 kV	24 kV
Rated frequency	f_r	50 Hz / 60 Hz	50 Hz / 60 Hz
Rated short-time current	I_k	20 kA	20 kA
Rated short-circuit duration	t_k	3 s	3 s
Rated peak withstand current	I_p	50 kA	50 kA
Rated impulse withstand voltage	U_p		
- Phase to earth		75 kV	125 kV
Rated power frequency withstand voltage	U_d		
- Phase to earth		28 kV	50 kV
Drawing-no.		IT3-105362	IT3-108089
Mechanical life		M2	M2
Electrical life		E1	E0

Drawing for ES 12-20-4 / Drawing no IT3-105362

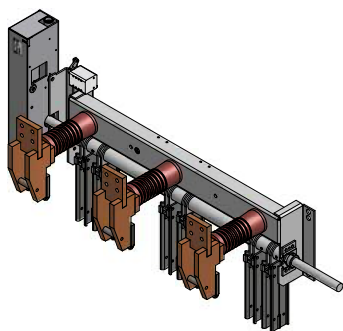


Drawing for ES 24-20-4 / Drawing no IT3-108089



DRIESCHER - Special Designs

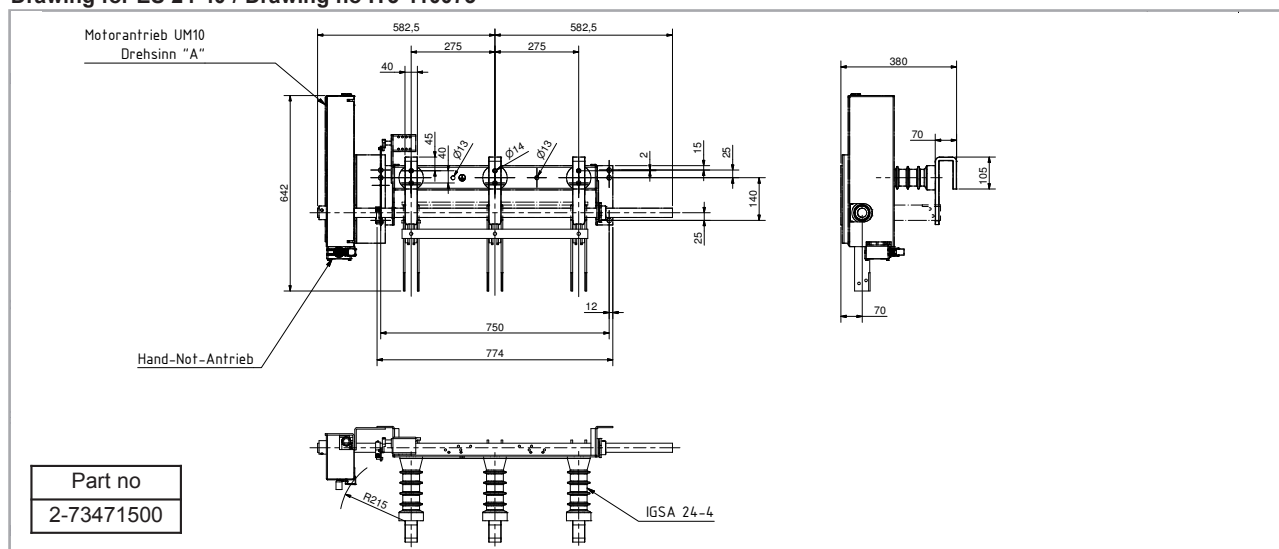
3-pole Indoor Earthing Switch Type ES 24-.. ; (Ur 24 kV)



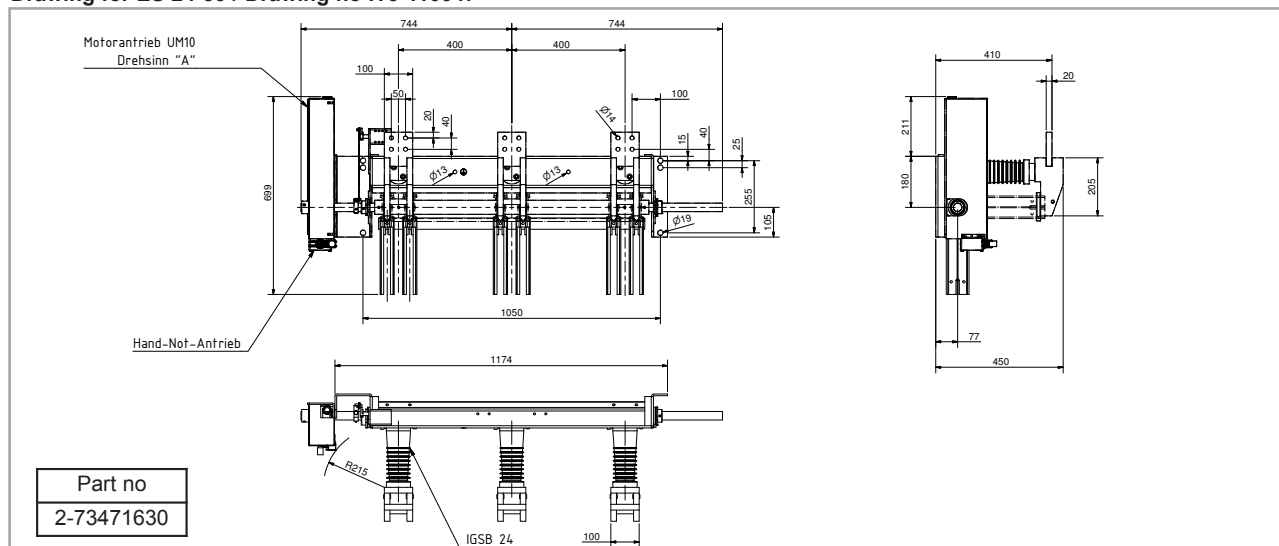
Accessory: • signalling contacts
• motor actuator UM 10

Type	ES 24-40	ES 24-50
Rated voltage	U_r 24 kV	24 kV
Rated frequency	f_r 50 Hz / 60 Hz	50 Hz / 60 Hz
Rated short-time current	I_k 40 kA	50 kA
Rated short-circuit duration	t_k 3 s	3 s
Rated peak withstand current	I_p 100 kA	125 kA
Rated impulse withstand voltage	U_p	
- Phase to earth	125 kV	125 kV
Rated power frequency withstand voltage U_d		
- Phase to earth	50 kV	50 kV
Drawing-no.	IT3-110073	IT3-110047
Mechanical life	M1	M1
Electrical life	E0	E0

Drawing for ES 24-40 / Drawing no IT3-110073

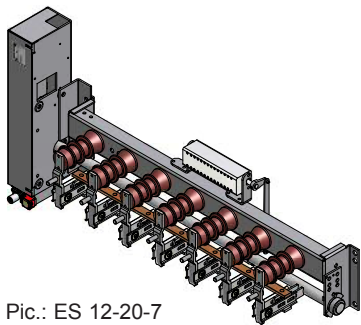


Drawing for ES 24-50 / Drawing no IT3-110047



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7-, 8- and 9-pole Indoor Earthing Switch Type ES 12-20-.. ; (Ur 3,6 kV)

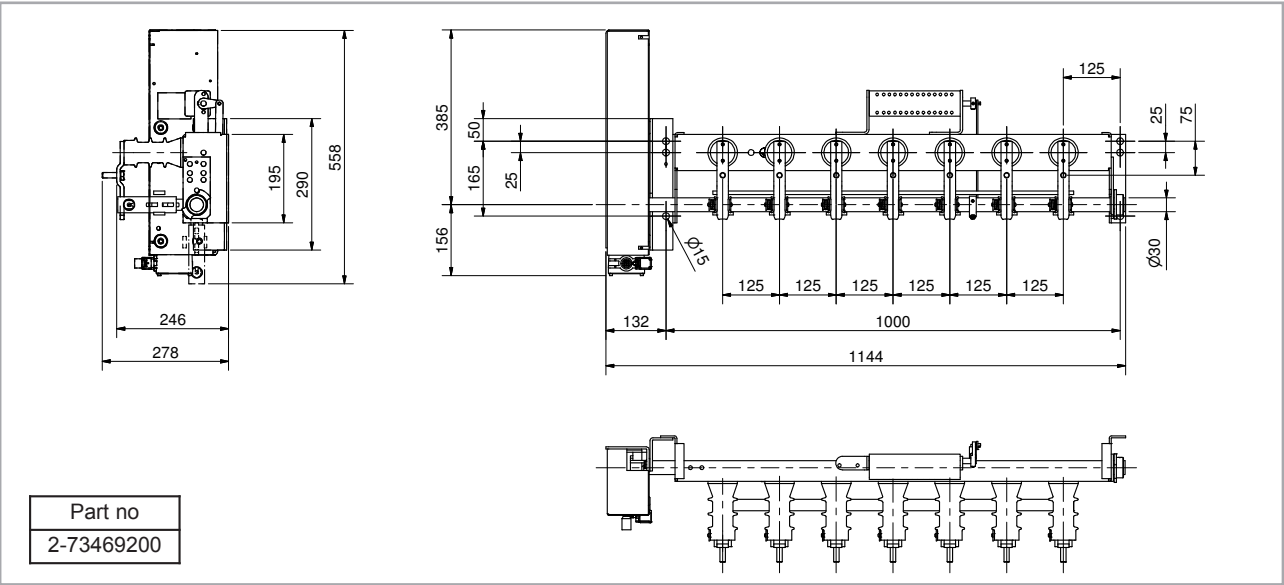


Pic.: ES 12-20-7

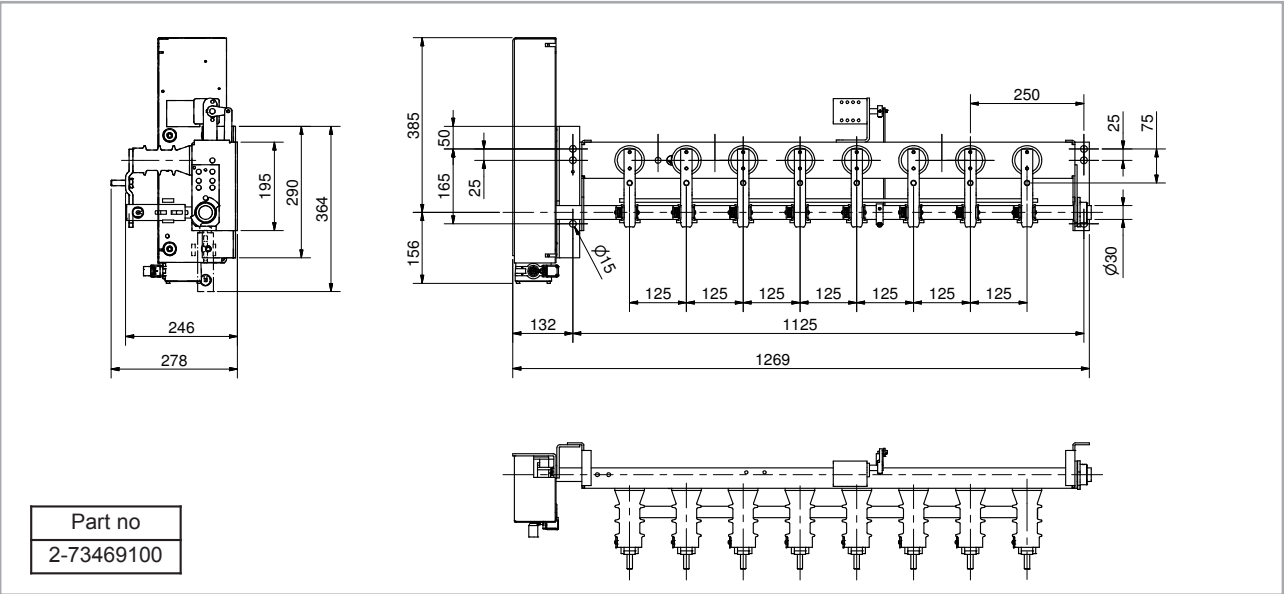
Accessory: • signalling contacts
• motor actuator UM 10
and UM 50

Type	ES 12-20-7	ES 12-20-8	ES 12-20-9
Rated voltage	U_r 3,6 kV	3,6 kV	3,6 kV
Rated frequency	f_r 50 Hz / 60 Hz	50 Hz / 60 Hz	50 Hz / 60 Hz
Rated short-time current	I_k 20 kA	20 kA	20 kA
Rated short-circuit duration	t_k 3 s	3 s	3 s
Rated peak withstand current	I_p 50 kA	50 kA	50 kA
Rated impulse withstand voltage	U_p		
- Phase to earth	40 kV	40 kV	40 kV
Rated power frequency withstand voltage	U_d		
- Phase to earth	28 kV	28 kV	28 kV
Drawing-no.	IT3-108145	IT3-108451	IT3-110800
Mechanical life	M2	M2	M2
Electrical life	E0	E0	E0

Drawing for ES 12-20-7 / Drawing no IT3-108145



Drawing for ES 12-20-8 / Drawing no IT3-108451



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7-pol. Indoor Earthing Device Type EE 3,6-5-7 ; (Ur 3,6 kV)

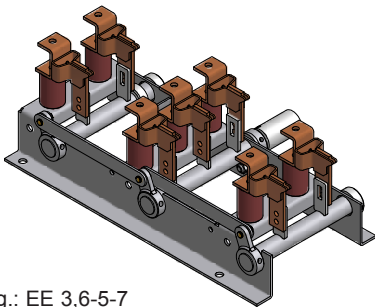
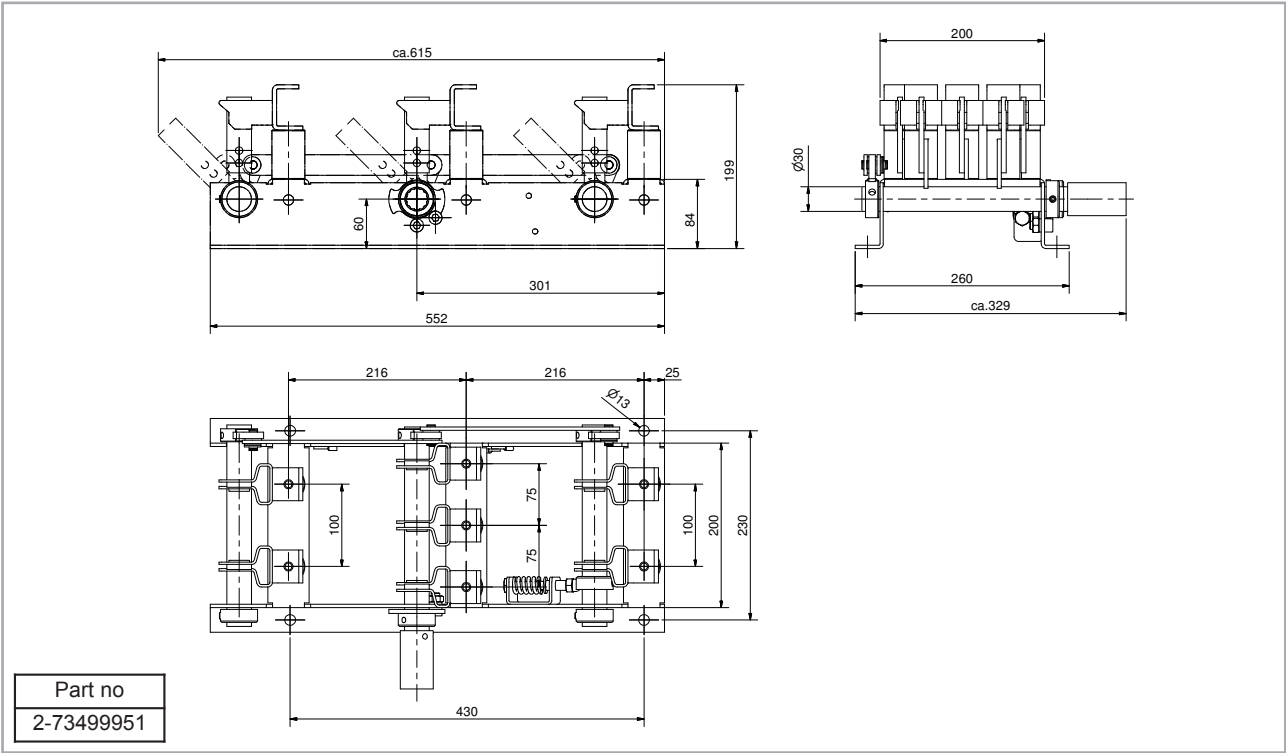


Fig.: EE 3,6-5-7

Type		EE 3,6-5-7
Rated voltage	U_r	3,6 kV
Rated frequency	f_r	50 Hz / 60 Hz
Rated short-time current	I_k	5 kA
Rated short-circuit duration	t_k	1 s
Rated impulse withstand voltage	U_p	
- Phase to earth		20 kV
Rated power frequency withstand voltage	U_d	
- Phase to earth		10 kV
Drawing-no.		IT3-104909
Mechanical life		M1
Electrical life		E0

Drawing for EE 3,6-5-7 / Drawing no IT3-104909



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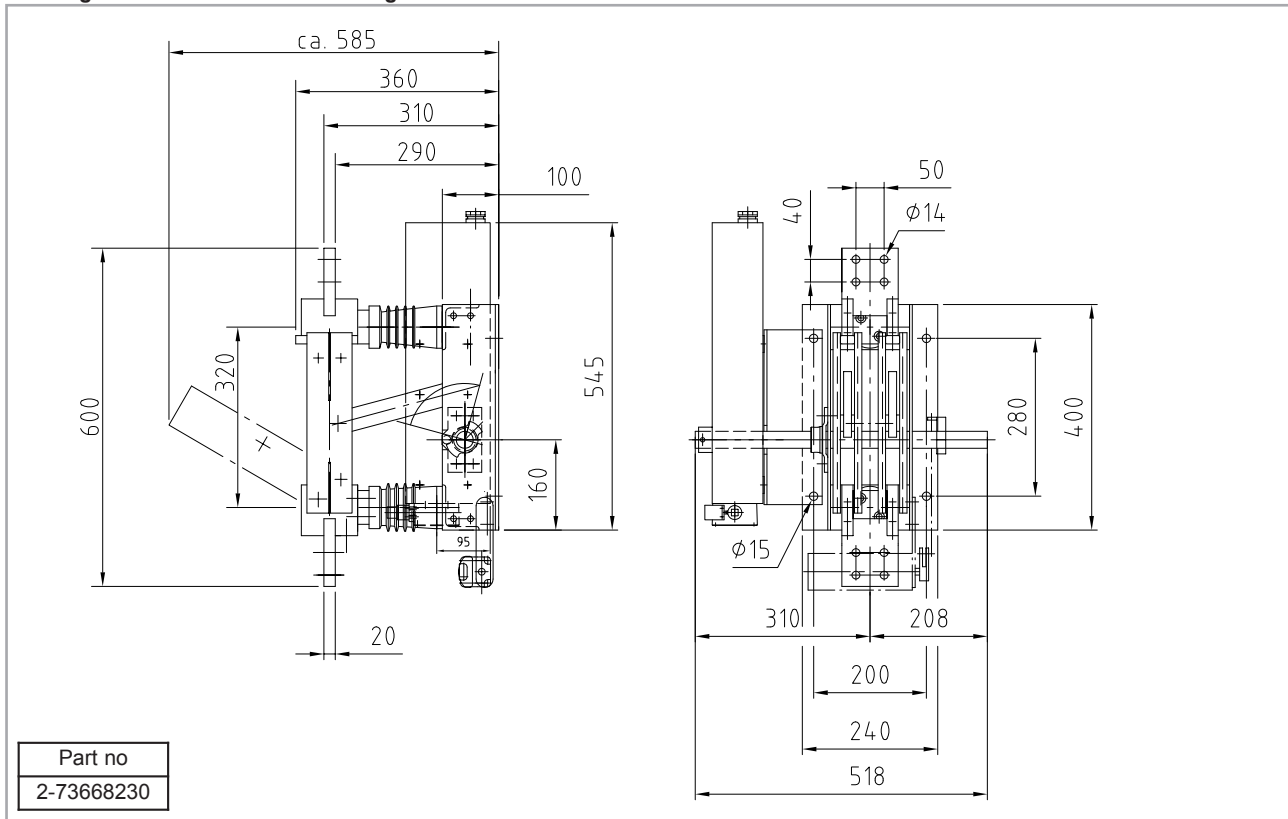
1-pole Indoor Disconnecter Type ITr 12-4000-50-1 ; (Ur 12/ $\sqrt{3}$ kV)

Type ITr 12-4000-50-1

Rated voltage	U_r	12/ $\sqrt{3}$ kV
Rated frequency	f_r	50 Hz / 60 Hz
Rated current	I_r	4000 A
Rated short-time current	I_k	50 kA
Rated short-circuit duration	t_k	3 s
Rated peak withstand current	I_p	125 kA
Rated impulse withstand voltage	U_p	
- Phase to earth		75 kV
Rated power frequency withstand voltage	U_d	
- Phase to earth		28 kV
Drawing-no.	IT3-104106	
Mechanical life	M1	

Accessory: • signalling contacts
• motor actuator UM 10
and UM 50

Drawing for ITr 12-4000-50-1 / Drawing no IT3-104106



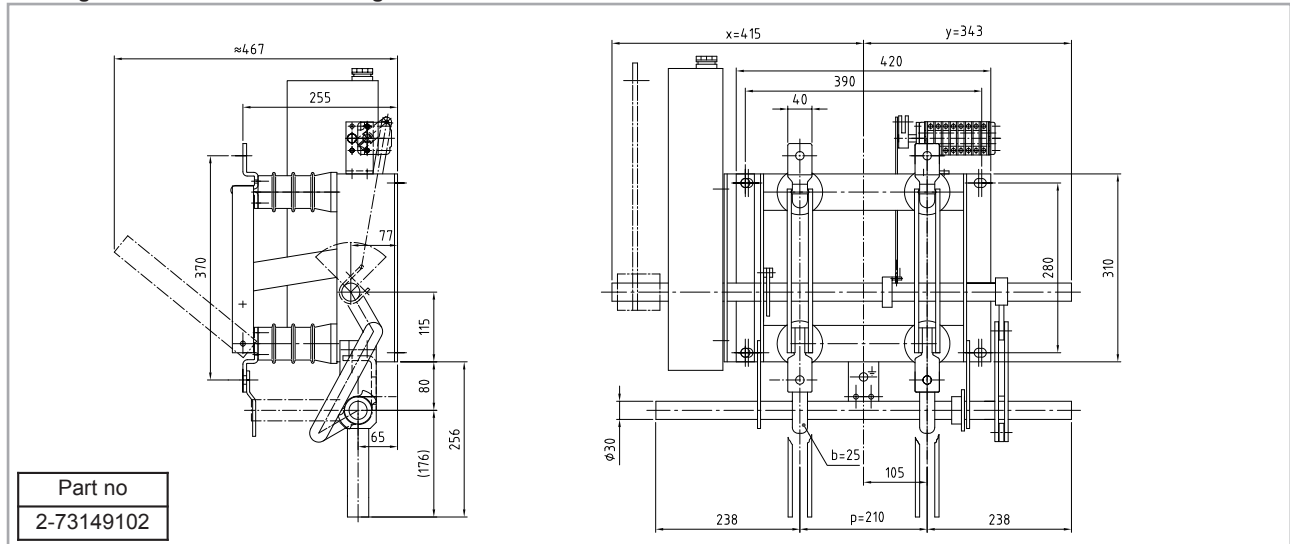
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2-pole Indoor Disconnectors Type ITr-2 ; (Ur 12 kV, 24 kV and 38,5 kV)

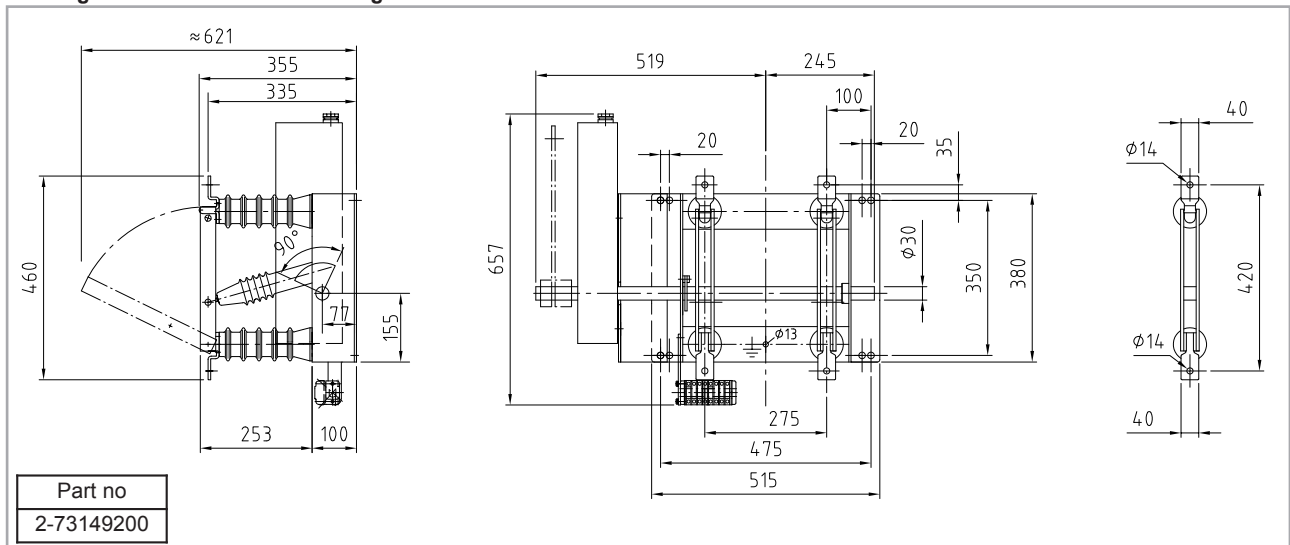
Type		ITr 12-630-20-2	ITr 24-630-20-2	ITr 24-1600-31,5-2	ITr 36-2500-50-2
Rated voltage	U_r	12 kV	24 kV	24 kV	38,5 kV
Rated frequency	f_r	50 Hz / 60 Hz	50 Hz / 60 Hz	50 Hz / 60 Hz	50 Hz / 60 Hz
Rated current	I_r	630 A	630 A	1600 A	2500 A
Rated short-time current	I_k	20 kA	20 kA	31,5 kA	50 kA
Rated short-circuit duration	t_k	3 s	3 s	3 s	3 s
Rated peak withstand current	I_p	50 kA	50 kA	80 kA	125 kA
Rated impulse withstand voltage	U_p				
- Phase to earth		75 kV	125 kV	125 kV	180 kV
Rated power frequency withstand voltage	U_d				
- Phase to earth		28 kV	50 kV	50 kV	80 kV
Drawing-no.		IT3-100427	IT3-108084	IT3-108085	IT3-107875
Mechanical life		M2	M2	M2	M1

Accessory: • signalling contacts
• motor actuator UM 10
and UM 50

Drawing for ITr 12-630-20-2 / Drawing no IT3-100427



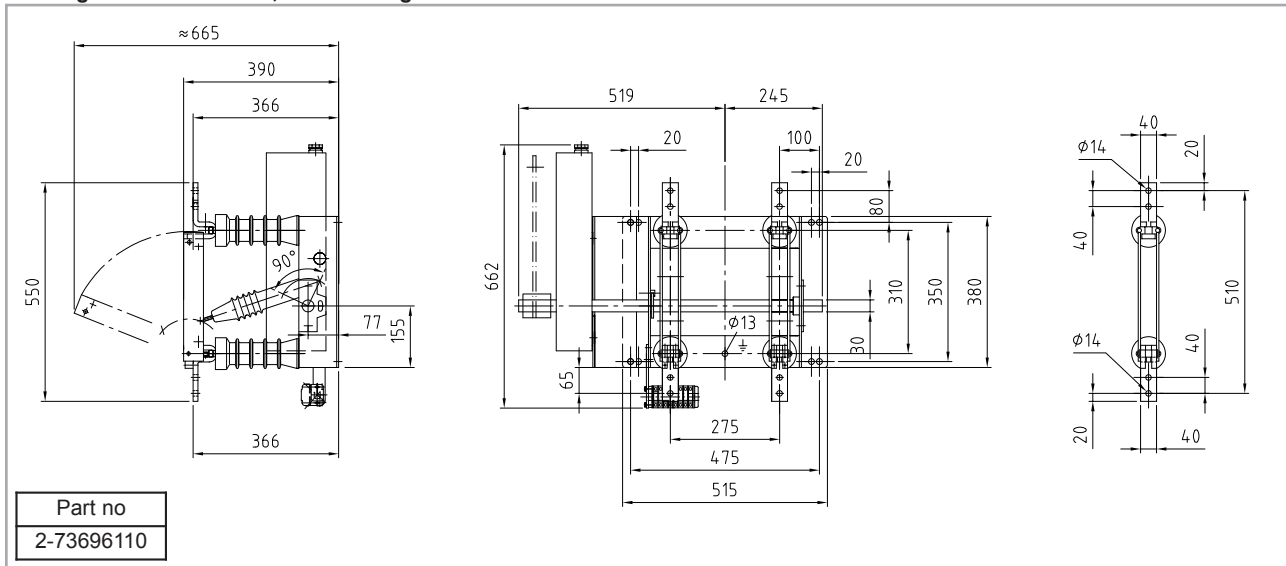
Drawing for ITr 24-630-20-2 / Drawing no IT3-108084



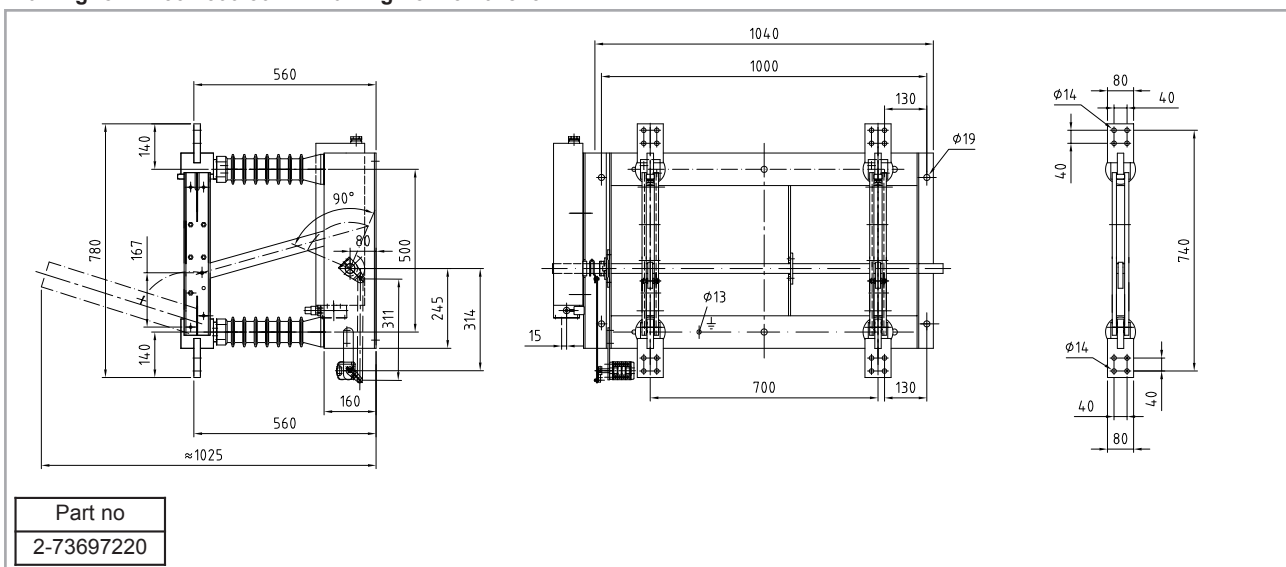
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2-pole Indoor Disconnectors Type ITr-2 ; (Ur 12 kV, 24 kV and 38,5 kV)

Drawing for ITr 24-1600-31,5-2 / Drawing no IT3-108085



Drawing for ITr 36-2500-50-2 / Drawing no IT3-107875



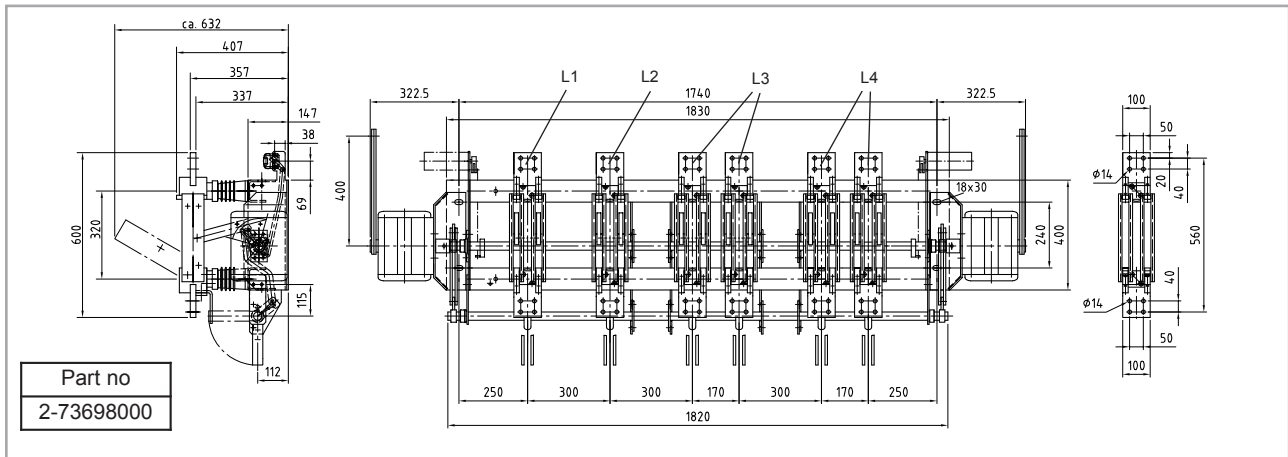
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4-pole Indoor Disconnecter Type ITr 12-4000-50-4 ; (Ur 12 kV)

Type		ITr 12-4000-50-4
Rated voltage	U_r	12 kV
Rated frequency	f_r	50 Hz / 60 Hz
Rated current	I_r	4000 A / 8000 A
Rated short-time current	I_k	50 kA
Rated short-circuit duration	t_k	1 s
Rated peak withstand current	I_p	125 kA
Rated impulse withstand voltage	U_p	
- Phase to earth		75 kV
Rated power frequency withstand voltage	U_d	
- Phase to earth		28 kV
Drawing-no.		IT3-103264
Mechanical life		M2

Accessory: • signalling contacts
• motor actuator UM 10
and UM 50

Drawing for ITr 12-4000-50-4 / Drawing no IT3-103264



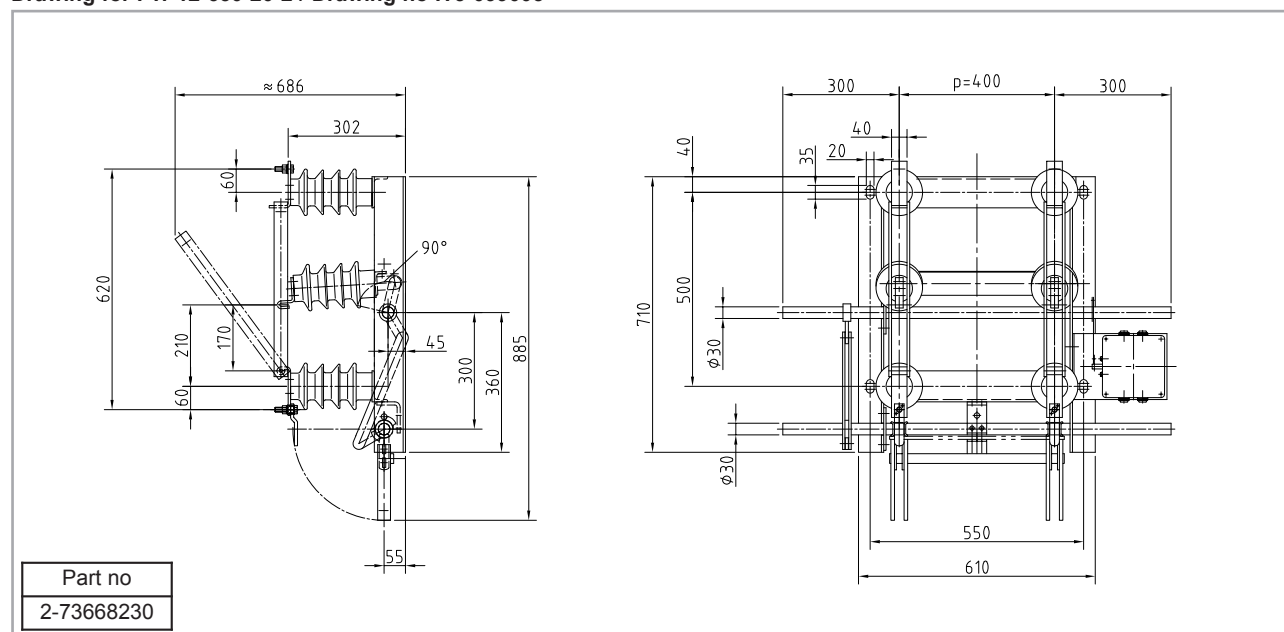
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2-pole Outdoor Disconnectors Type FTr 12-630-20-2 ; (Ur 12 kV)

Type	FTr 12-630-20-2	
Rated voltage	U_r	12 kV
Rated frequency	f_r	50 Hz / 60 Hz
Rated current	I_r	630 A
Rated short-time current	I_k	20 kA
Rated short-circuit duration	t_k	3 s
Rated peak withstand current	I_p	50 kA
Rated impulse withstand voltage	U_p	
- Phase to earth		75 kV
Rated power frequency withstand voltage	U_d	
- Phase to earth		28 kV
Drawing-no.	IT3-099005	
Mechanical life	M2	

Accessory: • signalling contacts
• motor actuator UM 90

Drawing for FTr 12-630-20-2 / Drawing no IT3-099005



Dimensions, weights, diagrams and descriptions in this brochure are non-binding. Subject to change without notice.

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